

REMARKS

INTRODUCTION

In accordance with the foregoing, no claims have been amended. Claims 1-14 are pending in the application.

REJECTIONS UNDER 35 U.S.C. § 103

Claims 1-14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Namiki et al. (US 5,235,381) (hereinafter "Namiki") in view of Ide (US 4,586,813) (hereinafter "Ide") and Nishimura (US 4,848,545) (hereinafter "Nishimura").

Namiki discusses a rotation controlling apparatus including a spring clutch. A sheet supply roller 101 is mounted on a roller holder 102. The roller holder 102 is non-rotatably mounted on a sheet supply shaft 103. On the sheet supply shaft 103, there are mounted a rotatable input gear 105 rotated by an external driving system 104, and a boss 106 secured to the sheet supply shaft 103. The input gear 105 and the boss 106 are provided at the confronting ends with cylindrical extensions 105a and 106, and a spring 107 is mounted around these extensions with a slight gap therebetween. The spring 107 is so mounted that, when the input gear is rotated, the spring is contracted to be urged against the extensions. The other end of the spring is cocked radially outward, so that it is engaged by a control ring 108 extending between around inner shoulders 105b, 106b of the input gear 105 and of the boss 106. The control ring 108 is provided at its peripheral surface with a pawl 108a by which a flapper 110 mounted on a solenoid 109 can be engaged. When the solenoid 109 is turned OFF, the flapper 110 is engaged by the pawl 108a, whereas, when the solenoid is turned ON, the flapper is disengaged from the pawl. Namiki, 1:10-1:47 and Figs. 10-13.

Ide discusses an image forming apparatus including a feed mechanism 8'. The feed mechanism 8' includes a feed roller 10 mounted on a rotating shaft 151 and a sleeve 152 mounted on the rotating shaft 151. The sleeve 152 is coupled to a transmission to which the driving force of a motor 21 is transmitted through a spring clutch 153. A projection 154 is formed on the inner surface of the sleeve 152, and projections 155 and 156 are formed on the outer surface of the sleeve 152 at a predetermined angular interval. Ide, 10:52-10:63 and Figure 19.

Nishimura discusses an electromagnetically controlled spring clutch mechanism. In Nishimura, a supporting member 42 has a cylindrical sleeve portion 44a mounted rotatably on a medium-diameter portion 4b of a shaft member 4 and a rectangular main body portion 44b formed as a one-piece unit with the cylindrical sleeve 44a, and a cut 46 is formed at one end of the main body portion 44b. Part of a vertical base plate 2 is bent to the right to form an engaging portion 48 which is received in the cut 46 formed in the main body portion 44b. Nishimura, 5:18-5:23 and Figure 2.

Claims 1-6

Claim 1 recites "...a solenoid unit for supporting the housing and selectively on/off-controlled..." In contrast to claim 1, neither Namiki nor Ide nor Nishimura discuss a solenoid for supporting the housing. In the Office Action it was stated that neither Namiki nor Ide show the solenoid supporting the housing. This deficiency in Namiki and Ide is not cured by Nishimura. In Nishimura, the supporting member 42 supports the medium diameter portion 4b of the shaft member 4, and the supporting member is supported the engaging portion 48 of the base plate 2. The housing in Nishimura is not supported by a solenoid unit as is recited in claim 1.

Claims 2-6 are dependent on claim 1 and are therefore believed to be allowable for the reasons discussed above. Further, claims 2-6 recite features that patentably distinguish over Namiki and Ide, taken alone or in combination. For example, claim 2 recites that when a pair of the phase protuberances is projected on an outer periphery of the housing, for corresponding to a position of a switch member in its off-state that is changed by on/off operation of the solenoid unit.

Withdrawal of the foregoing rejection is requested.

Claims 7-10

Claim 7 recites "...a solenoid unit adapted to rotatably support the housing..." In contrast to claim 7, neither Namiki nor Ide nor Nishimura discuss a solenoid for rotatably supporting the housing. In the Office Action it was stated that neither Namiki nor Ide show the solenoid supporting the housing. This deficiency in Namiki and Ide is not cured by Nishimura. In Nishimura, the supporting member 42 supports the medium diameter portion 4b of the shaft member 4, and the supporting member is supported the engaging portion 48 of the base plate 2. The housing in Nishimura is not rotatably supported by a solenoid unit as is recited in claim 7.

Claims 8-10 are dependent on claim 7 and are therefore believed to be allowable for the reasons discussed above. Further, claims 8-10 recite features that patentably distinguish over Namiki and Ide, taken alone or in combination. For example, claim 8 recites that the first phase protuberance and the second phase protuberance are on opposing sides of the housing surface.

Withdrawal of the foregoing rejection is requested.

Claims 11-14

Claim 11 recites "...a solenoid unit adapted to rotatably support the housing..." In contrast to claim 11, neither Namiki nor Ide nor Nishimura discuss a solenoid for rotatably supporting the housing. In the Office Action it was stated that neither Namiki nor Ide show the solenoid supporting the housing. This deficiency in Namiki and Ide is not cured by Nishimura. In Nishimura, the supporting member 42 supports the medium diameter portion 4b of the shaft member 4, and the supporting member is supported the engaging portion 48 of the base plate 2. The housing in Nishimura is not rotatably supported by a solenoid unit as is recited in claim 11.

Claims 12-14 are dependent on claim 11 and are therefore believed to be allowable for the reasons discussed above. Further, claims 12-14 recite features that patentably distinguish over Namiki and Ide, taken alone or in combination. For example, claim 14 recites that the driving gear and clutch slip do not provide rotational force to the housing when the switch member engages a protuberance on the housing.

Withdrawal of the foregoing rejection is requested.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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